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A TCP FAST RECOVERY EXTENDED METHOD AND APPARATUS

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Abstract of the Disclosure

A fast recovery extended method is used to enhance the performance of TCP fast recovery when multiple segment losses occur within a single round trip time between a TCP sender and a TCP receiver. A TCP fast recovery process is performed by a TCP sender, and then a TCP fast recovery extended process is performed by the TCP sender upon receiving acknowledgement of receipt of new data from a TCP receiver in the TCP fast recovery process. The fast recovery extended process determines, following receipt of the acknowledgement of receipt of new data, an excess number of duplicate acknowledgements based upon a count of consecutive duplicate acknowledgement packets. The fast recovery extended process takes a network packet transmission recovery action based upon the excess number of duplicate acknowledgements, and then stores the excess number of duplicate acknowledgements as a number of duplicate acknowledgements for further use. The network packet transmission recovery actions include: Taking no further action; Deflating a size of a congestion window **cwnd**; Optimizing a size of the congestion window **cwnd**; Performing a second fast retransmit; Resizing the optimized size congestion window **cwnd**; and Resizing the deflated size congestion window **cwnd**. Also, only the TCP sender needs to have the fast recovery extended method available. No changes are required of a TCP receiver.